

### CLAIMS

1. A sprinkler head comprising:
- a first housing connected to a water supply pipe;
  - 5 a second housing coupled to the first housing;
  - a deflector adhered to the first housing in a sealing-available manner, for spraying water all around at the time of a fire occurrence by being detached from the first housing;
  - a locking unit locked inside the second housing for maintaining the
  - 10 sealing state between the deflector and the first housing;
  - a plurality of heat collecting plates exposed to outside of the ceiling, for heat-collecting at the time of a fire occurrence;
  - a heat responding unit having a fuse metal for releasing the locking state of the locking unit by being melted by heat collected into the heat
  - 15 collecting plates; and
  - a head cover mounted at a lower side of the heat responding unit with a certain interval for covering the heat responding unit not to expose to outside and heat-collecting at the time of a fire occurrence and thereby transmitting the heat to the heat responding unit.
  - 20
2. The sprinkler head of claim 1, wherein the head cover includes:
- a disc for heat-collecting;

a heat transmission plate attached to the center of an upper surface of the disc, for transmitting heat collected by the disc to the heat responding unit; and

a couple member formed at an upper surface of the heat transmission  
5 plate and coupled to the heat responding unit.

3. The sprinkler head of claim 2, wherein the disc has a diameter larger than a diameter of the plurality of heat collecting plates, and is provided with a flange portion protruded upwardly at the outer edge thereof.

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4. The sprinkler head of claim 2, wherein the disc is provided with a plurality of ribs formed with a certain interval in a circumferential direction thereof for reinforcing an intensity.

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5. The sprinkler head of claim 3, wherein a certain interval is formed between an upper surface of the flange portion of the disc of the head cover and the ceiling surface in order to introduce heated air into the heat collecting plates.

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6. The sprinkler head of claim 2, wherein the heat transmission plate of the head cover is mounted between the heat collecting plates and the disc and has a certain thickness for maintaining a certain clearance

therebetween.

7. The sprinkler head of claim 4, wherein the heat transmission plate is in contact with a lower surface of a locking screw for integrally  
5 coupling the locking unit and the heat responding unit, and has a diameter smaller than a diameter of a head portion of the locking screw.

8. The sprinkler head of claim 2, wherein the couple member is composed of a screw bar perpendicularly protruded at an upper surface of the  
10 heat transmission plate thus to be coupled to the heat responding unit by a screw.

9. The sprinkler head of claim 2, wherein the couple member is composed of a locking hook perpendicularly protruded with a certain interval  
15 in a circumferential direction of the disc and having a locking protrusion at the end portion thereof thus to be locked at the heat collecting plate.

10. The sprinkler head of claim 1 further comprising a cover member coupled to an outer circumferential surface of the second housing  
20 and adhered to the ceiling surface, for covering an opening of the ceiling to which the sprinkler head is inserted.

11. The sprinkler head of claim 10, wherein the cover member includes:

a plate portion formed as a disc shape of which the center is open and adhered to an outer side surface of the ceiling; and

5 a couple portion protruded from an upper side surface of the plate portion thus to be coupled to a second male screw portion of the second housing.

12. The sprinkler head of claim 11, wherein the couple portion is  
10 formed as a cylindrical shape that a female screw portion is formed at an inner circumferential surface thereof.

13. The sprinkler head of claim 11, wherein the couple portion is formed at a circumferential surface of the plate portion with a certain interval  
15 and has a plurality of protrusions locked at the second male screw portion of the second housing at an inner surface thereof.

14. The sprinkler head of claim 1 further comprising a hole cover mounted at an outer circumferential surface of the second housing, for  
20 covering a tool insertion hole formed at the second housing.

15. The sprinkler head of claim 14, wherein the hole cover is formed

as a cylindrical shape that is inserted into an outer circumferential surface of the second housing in a sealing-able manner.

16. The sprinkler head of claim 14, wherein a first male screw  
5 portion and a second male screw portion are respectively formed at upper and lower sides of the outer circumferential surface of the second housing, and the hole cover is mounted at an outer surface between the first male screw portion and the second male screw portion.

10 17. The sprinkler head of claim 15, wherein an upper surface of the hole cover is provided with a rib outwardly extended so as to be adhered to a lower surface of the flange portion of the first housing.

18. The sprinkler head of claim 15, wherein the hole cover is  
15 mounted at the outer circumferential surface of the second housing by a forcible inserting method.

19. The sprinkler head of claim 1, wherein a flange portion of the  
first housing is provided with a tool insertion hole for inserting a tool, a  
20 supporting groove to which the tool that has passed the tool insertion hole is inserted for supporting the deflector 6 not to be rotated is formed at a deflector ring of the deflector, and a packing member for covering the tool

insertion hole is fitted into the tool insertion hole.